

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 61-124701

(43)Date of publication of application : 12.08.1986

(51)Int.Cl.

F15B 9/08

(21)Application number : 59-245172

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(22)Date of filing : 20.11.1984

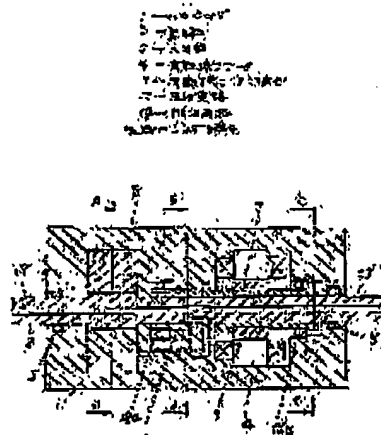
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## (54) HYDRAULIC ACTUATOR

## (57)Abstract:

PURPOSE: To reduce a hydraulic actuator in size and weight by incorporating an electric motor in a housing and disposing a rolling bearing between the housing and the input shaft.

CONSTITUTION: An electric motor comprising an electric motor stator 4 and an electric motor rotor 7 is incorporated in a housing 1, and roller bearings 18a, 18b are disposed between the housing 1 and an input shaft 3, so that the input shaft 3 is supported by the roller bearings 18a, 18b. In this arrangement, the need of oil seal between the input shaft 3 and the housing 1 and between the input shaft 3 and the output shaft 2 is eliminated to lessen sliding friction torque of a seal member, and the driving torque of the input shaft 3 is lessened by the roller bearings 18a, 18b, so that the input shaft is driven by a small-sized electric motor to reduce a hydraulic actuator in size and weight.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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